

Biospecimen Collection in Molecular Epidemiology: Methods Development

Patricia Hartge, M.A., Sc.D.

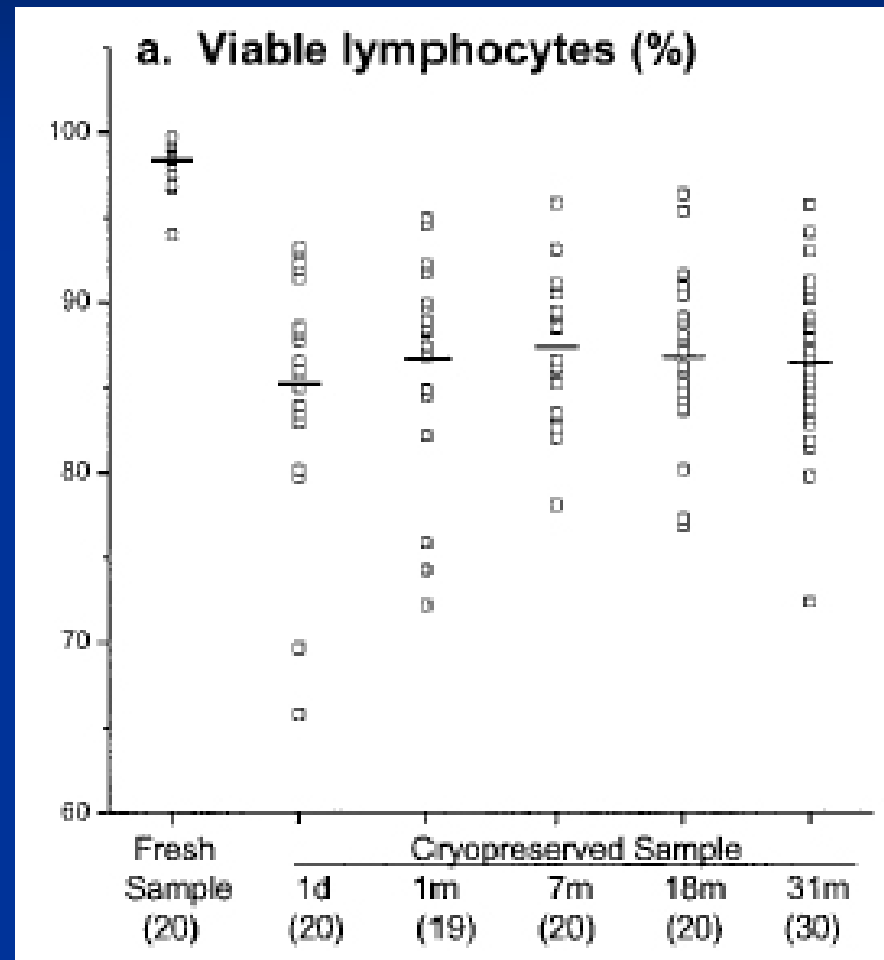
Division of Cancer Epidemiology and
Genetics

Molecular Epidemiology

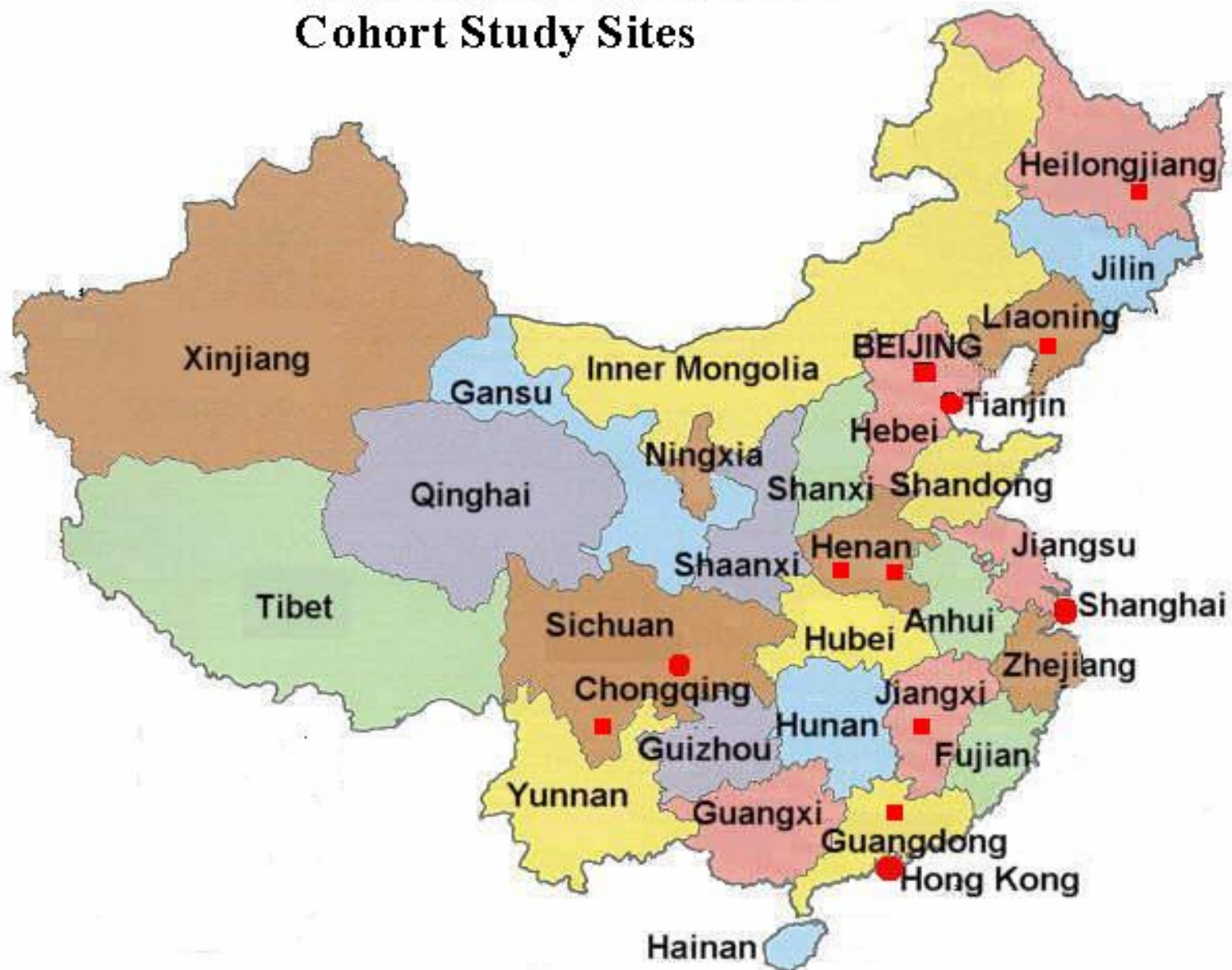
Standard Designs

- Randomized Clinical Trials
 - Prostate, Lung, Colon, Ovarian Cancer Screening Trial
- Cohort Studies
 - China Benzene Study
- Case-control Studies
 - Non-Hodgkin Lymphoma in Detroit, Seattle, LA, and Iowa
- Cross-Sectional Studies
 - Washington Ashkenazi Survey

Prostate, Lung, Colon, Ovarian Cancer Screening Trial



NCI-China CDC Benzene Cohort Study Sites



Blood collection



Urine collection



Sample shipment



Buccal cell collection



Case-control Study: Non-Hodgkin Lymphoma in Detroit, Seattle, LA, and Iowa

- Serum organochlorines: are they altered by chemotherapy?
 - Clinical center patient series (Baris
- DNA collection
 - Blood preferred but some will not give
 - Compare buccal cell options
(Harty et al. CEBP 2000; Garcia-Closas et al. CEBP 2001)
- Whole blood
 - Shipping for lymphocyte viability (winter/summer)
- (non-biological) specimens: pesticide residues in carpet dust

Cross-Sectional Study: Washington Ashkenazi Survey

- Needed to enroll 5000 volunteers in 6 weeks
 - Multiple venues, weekends, evenings
- Devised short questionnaire for family history
- Needed DNA, small volume
 - Simple storage requirements, non –threatening and readily accepted, small volume
 - Pilot testing of various methods:
 - Chose finger-prick and Guthrie cards
 - Not OK for long-term storage (DNA degradation)

DCEG Methods Research

- Molecular Epidemiology Awards (4 @ \$10K in FY06)
 - Methods for collecting, shipping, processing and storage of biospecimens
 - Projects useful for maintaining biorepositories
 - Projects useful for ensuring that samples can be analyzed with state-of-the-art techniques
 - Biomarker development with widespread applicability
 - → Can also serve as a pilot study
- NCI Innovation Award FY06 (\$10K to Mark Cosentino)
- DCEG biannual molecular epidemiology course

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- CDC, NIOSH, Others